THAT WHICH IS CLAIMED:

1. A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

decoding the received signal according to respective codes of the set of codes to
5   generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the first station and a second station that transmitted the signal; and

decoding the received signal according to the selected code to generate an estimate of
10 the information.

2. A method according to Claim 1:

wherein said step of selecting a code from the set of codes is preceded by the step of generating a measure of quality for a channel over which the signal is communicated based on a communication between the first and second stations; and
5   wherein said step of selecting a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on the generated measure of channel quality.

3. A method according to Claim 2, wherein said step of generating a measure of channel quality comprises the step of determining at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio.

4. A method according to Claim 1:

wherein said step of selecting a code from the set of codes is preceded by the step of communicating a communications status report between the first and second stations; and

wherein said step of selecting a code from the set of codes comprises the step of
5   biasing a selection of a code from the set of codes based on the communications status report.

5. A method according to Claim 4, wherein said step of communicating a communications status report comprises the step of communicating an ARQ status message between the first and second stations.

6.   A method according to Claim 1, wherein said step of selecting a code from the set of codes comprises the steps of:

determining a state of a communications transaction between the first and second stations; and

5   biasing a selection of a code from the set of codes based on the determined state of the communications transaction.

7.   A method according to Claim 2:

wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes is preceded by the steps of;

5   receiving a first signal; and

decoding the received first signal according to a first code of the set of codes to generate an estimate of information represented by the previously transmitted signal;

wherein said step of receiving a signal comprises the step of receiving a second

10   signal;

wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes comprise the step of decoding the received second signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective

15   codes of the set of codes; and

wherein said step of selecting a code from the set of codes comprises the step of biasing a selection of a code from the set of codes based on the first code used to decode the received first signal.

8.   A method according to Claim 7:

wherein said step of decoding the received first signal according to one of the codes of the set of codes is followed by the step of determining validity of the generated estimate of the information represented by the first signal; and

5   wherein said step of biasing a selection of a code from the set of codes based on the first code used to decode the previously transmitted signal comprises the step of biasing the selection of the code from the set of codes based on the determined validity of the generated estimate of the information represented by the first signal.

24

9.   A method according to Claim 8, wherein said step of determining validity of the generated estimate of the information represented by the first signal comprises the step of performing a CRC check on the generated estimate of the information represented by the first signal.

10.   A method according to Claim 1, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said step of selecting a code from the set of codes based on the respective

5   likelihood metrics comprises the steps of:

processing the received signal to generate an estimate of the second field; and

selecting a code from the set of codes based on the respective likelihood

metrics and the generated estimate of the second field; and

wherein said step of decoding the received signal according to the selected code

10   comprises the step of decoding the received signal according to the selected code to generate an estimate of the first field.

11.   A method according to Claim 1, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

12.   A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

5   processing the received signal to generate an estimate of the second field;

choosing to perform one of the following steps to identify the code applied to the first field, based on a confidence in the generated estimate of the second field:

identifying the code applied to the first field based solely on the generated

estimate of the second field; or

10   identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes; and

25

decoding the received signal according to the identified code to produce an estimate of the first field.

13.   A method according to Claim 12:

wherein said step of identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises the

5   steps of:

decoding the received signal according to respective codes of the set of codes; and

generating respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes.

14.   A method according to Claim 13, wherein said step of decoding the received signal according to respective codes of the set of codes comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

15.   A method according to Claim 13, wherein said step of decoding the received signal according to respective codes of the set of codes comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the first station and a second station that

5   transmitted the signal.

16.   A method according to Claim 15, wherein said step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on at least one of a

5   measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded.

16. A method according to Claim 12, wherein said step of identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises the step of biasing a selection of a code from the set of codes

5 based on prior communication between the first station and a second station that transmitted the signal.

18. A method according to Claim 17, wherein said step of biasing a selection of a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an

5 error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded.

19. A method according to Claim 12, wherein the first field is coded according to a channel code of a set of channel codes and is modulated according to a modulation code of a set of modulation codes, wherein the second field indicates the channel code and the modulation code applied to the first field, and wherein said step of identifying the code

5 applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises the steps of:

generating respective likelihood metrics associated with demodulating and decoding the received signal according to respective combinations of ones of the set of modulation

10 codes and ones of the set of channel codes; and

identifying the channel code and the modulation code applied to the first field based on the generated estimate of the second field and the generated likelihood metrics.

20. A method according to Claim 12, wherein the first field is coded according to a channel code of a set of channel codes and is modulated according to a modulation code of a set of modulation codes, wherein the second field indicates the channel code and the modulation code applied to the first field, and wherein said step of identifying the code

5 applied to the first field based on the generated estimate of the second field and respective

likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises the steps of:

generating respective likelihood metrics associated with demodulating the received signal according to respective modulation codes of the set of modulation codes;

10   identifying the modulation code applied to the first field based on the generated estimate of the second field and the generated likelihood metrics associated with demodulating the received signal according to respective modulation codes of the set of modulation codes;

demodulating the received signal according to the determined modulation code;

15   generating respective likelihood metrics associated with decoding the demodulated signal according to respective channel codes of the set of channel codes; and

identifying the channel code applied to the first field based on the generated estimate of the second field and the generated respective likelihood metrics associated with decoding the demodulated signal according to respective channel codes of the set of channel codes.

21.   A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

determining an extent to which to decode the received signal based on a prior

5   communication between the first station and a second station that transmitted the signal;

decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics; and

10   decoding the received signal according to the selected code to generate an estimate of the information.

22.   A method according to Claim 21, wherein said step of determining an extent comprises the steps of:

generating a measure of quality for a channel over which the signal is communicated; and

5   determining the extent to which to decode the received signal based on the generated measure of channel quality.

28

23. A method according to Claim 22, wherein said step of generating a measure of channel quality comprises the step of generating at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio estimate.

24. A method according to Claim 21, wherein said step of determining an extent to which to decode the received signal comprises the steps of:

communicating a communications status report between the first and second stations; and

5 determining the extent to which to decode the received signal based on the communications status report.

25. A method according to Claim 24, wherein said step of communicating a communications status report comprises the step of communicating an ARQ status message between the first and second stations.

26. A method according to Claim 21, wherein said step of determining an extent to which to decode the received signal comprises the steps of:

determining a state of a communications transaction between the first and second stations; and

5 determining the extent to which to decode the received signal based on the determined state of the communications transaction.

27. A method according to Claim 21:

wherein said step of determining an extent to which to decode the received signal is preceded by the steps of:

receiving a first signal; and

5 decoding the received first signal according to respective codes of the set of codes to a first extent to generate respective first likelihood metrics associated with respective codes of the set of codes;
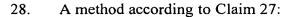
wherein said step of receiving a signal comprises the step of receiving a second signal; and

10 wherein said step of determining an extent to which to decode the received signal comprises the step of determining an second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded.

28.   A method according to Claim 27:

wherein said step of decoding the received first signal is followed by the steps of:

selecting a first code of the set of codes based on the respective first likelihood metrics;

5   decoding the received first signal according to the selected first code to generate an estimate of information represented by the first signal; and

determining validity of the generated estimate of the information represented by the first signal; and

wherein said step of determining a second extent to which to decode the received

10   second signal based on the first extent to which the received first signal was decoded comprises the step of determining the second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded and the determined validity of the generated estimate of the information represented by the first ·
signal.

29.   A method according to Claim 28, wherein said step of determining validity of the generated estimate of the information represented by the first signal comprises the step of performing a CRC check on the generated estimate of the information represented by the first signal.

30.   A method according to Claim 21, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said step of determining an extent to which to decode the received signal

5   comprises the steps of:

processing the received signal to generate an estimate of the second field; and

determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field; and

wherein said step of decoding the received signal according to the selected code to

10   generate an estimate of the information comprises the step of decoding the received signal according to the selected code to generate an estimate of the first field.

31.   A wireless station, comprising:

30

receiver that receives a signal representing information coded according to a code selected from a set of codes, that decodes the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes and that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to the selected code to generate an estimate of the information, wherein the selection of the code from the set of codes is biased based on prior communication between the wireless station and a station that transmitted the signal.

32.   A wireless station according to Claim 31, wherein said receiver comprises:

a code selector circuit that decodes the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes and that selects a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the wireless station and the station that transmitted the signal; and

a variable decoder that decodes the received signal according to the selected code to generate an estimate of the information.

33.   A wireless station according to Claim 32, wherein said code selector circuit is operative to bias the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that transmitted the signal, and a previously selected code.

34.   A wireless station according to Claim 33, wherein the measure of channel quality comprises at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio.

35.   A wireless station according to Claim 33, wherein the communications status report comprises an ARQ status message.

36.   A wireless station according to Claim 31, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

37. A wireless station for processing a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field, the wireless station comprising:

a code selector circuit that processes the signal to generate an estimate of the second

5   field, and that is operative, responsive to a confidence in the generated estimate of the second field, to select the code applied to the first field based solely on the generated estimate of the second field or to select the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes; and

10   a variable decoder, responsive to said code selector circuit, that decodes the signal according to the selected code to produce an estimate of the first field.

38. A wireless station according to Claim 37, wherein said code selector circuit is operative to decode the received signal according to respective codes of the set of codes and to generate respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes.

39. A wireless station according to Claim 38, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

40. A wireless station according to Claim 39, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the wireless station and a station that transmitted the signal.

A wireless station according to Claim 40, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the

5   signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded.

42. A wireless station according to Claim 40, wherein said code selector circuit is operative to bias a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal.

43. A wireless station according to Claim 42, wherein said code selector circuit is operative to bias a selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of

5 a communications transaction between the first station and the second station, and a previously selected code.

44. A wireless station according to Claim 47, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code..

45. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

a receiver that receives the signal, that determines an extent to which to decode the received signal based on a prior communication between the wireless station and a station

5 that transmitted the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to the selected code to generate an estimate of the information.

46. A wireless station according to Claim 45, wherein said receiver comprises:
a code selector circuit that determines an extent to which to decode the received signal based on a prior communication between the wireless station and the station that transmitted the signal, that decodes the received signal according to respective codes of the set of codes to

5 the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, and that selects a code from the set of codes based on the respective likelihood metrics; and

a variable decoder, responsive to said code selector circuit, that decodes the received signal according to the selected code to generate an estimate of the information.

47. A wireless station according to Claim 46, wherein said code selector circuit is operative to determine the extent to which to decode the received signal based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded.

48. A wireless station according to Claim 47, wherein the measure of channel quality comprises at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio estimate.

49. A wireless station according to Claim 47, wherein the communications status report comprises an ARQ status message.

50. A wireless station according to Claim 42, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and wherein said code selector circuit is operative to process the received signal to generate an estimate of the second field and to determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field.

51. A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:
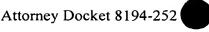means for receiving the signal;
means for decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes;
means for selecting a code from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the wireless station and a station that transmitted the signal; and
means for decoding the received signal according to the selected code to generate an estimate of the information.

52.   A wireless station according to Claim 51, wherein said means for selecting a code from the set of codes comprises means for biasing a selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that

5   transmitted the signal, and a previously selected code.

53.   A wireless station according to Claim 51, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

wherein said means for selecting a code from the set of codes based on the respective

5   likelihood metrics comprises:

means for processing the received signal to generate an estimate of the second field; and

means for selecting a code from the set of codes based on the respective likelihood metrics and the generated estimate of the second field; and

10   wherein said means for decoding the received signal according to the selected code comprises means for decoding the received signal according to the selected code to generate an estimate of the first field.

54.   A wireless station according to Claim 51, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

55.   A wireless station for processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the wireless station comprising:

5   means for receiving the signal;

means for processing the received signal to generate an estimate of the second field;

means, responsive to a confidence in the generated estimate of the second field, for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated

10   estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes; and

means for decoding the received signal according to the identified code to produce an estimate of the first field.

56.   A wireless station according to Claim 55:

wherein said means for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics

5   associated with decoding the received signal according to respective codes of the set of codes comprises:

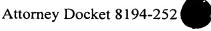means for decoding the received signal according to respective codes of the set of codes; and

means for generating respective likelihood metrics for the respective decodings of the

10   received signal according to the respective codes of the set of codes.

57.   A wireless station according to Claim 56, wherein said means for decoding the received signal according to respective codes of the set of codes comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field.

58.   A wireless station according to Claim 56, wherein said means for decoding the received signal according to respective codes of the set of codes comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the wireless station and a station

5   that transmitted the signal.

59.   A wireless station according to Claim 58, wherein said means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication comprises means for decoding the received signal according to respective codes of the set of codes to an extent that is determined based on at

5   least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded.

60.   A wireless station according to Claim 55, wherein said means for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according

5   to respective codes of the set of codes comprises means for biasing a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal.

61.   A wireless station according to Claim 60, wherein said means for biasing a selection of a code from the set of codes comprises means for biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the

5   signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded.

62.   A wireless station according to Claim 55, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.

63.   A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:
means for receiving the signal;
means for determining an extent to which to decode the received signal based on a

5   prior communication between the wireless station and a station that transmitted the signal;
means for decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;
means for selecting a code from the set of codes based on the respective likelihood

10   metrics; and
means for decoding the received signal according to the selected code to generate an estimate of the information.

64.   A wireless station according to Claim 63, wherein means for determining an extent comprises means for determining the extent to which to decode the received signal based on a least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that transmitted

5   the signal, and an extent to which a previously received signal was decoded.

65.   A wireless station according to Claim 63, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and:

    wherein said means for determining an extent to which to decode the received signal

5   comprises:

        means for processing the received signal to generate an estimate of the second field; and

        means for determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field; and

10   wherein said means for decoding the received signal according to the selected code to generate an estimate of the information comprises means for decoding the received signal according to the selected code to generate an estimate of the first field.